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CONTENTS.

Editorial Summary.
Builders' Hardware.—XI.
Mediæval Houses.—V.
Equestrian Monuments.—X.
Communications.
Notes and Clippings.
Trade Surveys.

ILLUSTRATIONS.

Seminary of St. Sulpice, Montreal, Canada.
(Gelatine Print issued only with Imperial Edition.)
Church, Rockville, Conn.
English Basement Dwellings, Washington, D. C.
The Statue of Charles II, London, Eng.
Out-Buildings Near a Country House.
House, Cincinnati, Ohio.
Y. M. C. A. Building, Bridgeport, Ct.
School-house, Philadelphia, Pa.

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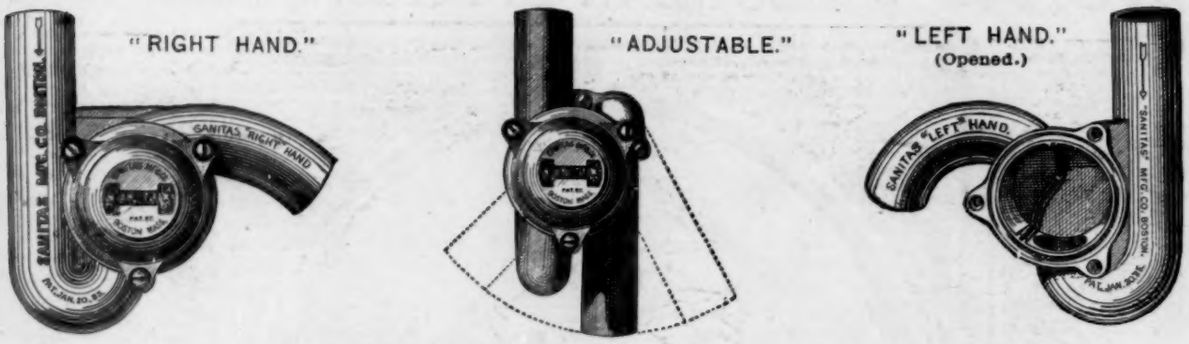

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CONTENTS

SUMMARY: —
The *British Architect* on one Phase of Architectural Practice in the United States. — The Possibility of introducing the Clerk-of-works into our Practice. — The best Material from which to make these Functionaries. — The Building of the Washington Aqueduct under Military Engineers. — The Congressional Library and General Casey. — Tombs recently discovered at Mycenæ. — The Milan Cathedral Competition. 213
BUILDERS' HARDWARE. — XI. 215
ILLUSTRATIONS: —
Seminary of St. Sulpice, Montreal, Canada. — Union Congregational Church, Rockville, Conn. — English Basement Dwellings for Col. R. W. Tyler and George A. Woodward, U. S. A., Washington, D. C. — The Statue of Charles II in the Stocks Market, London. — Out-buildings near a Country House. — House for F. H. Cloud, Esq., Walnut Hills, Cincinnati, O. — Y. M. C. A. Building, Bridgeport, Conn. — Our Mother of Sorrows School-house, Philadelphia, Pa. . . 219
MEDIÆVAL HOUSES. — V. 219
EQUESTRIAN MONUMENTS. — X. 223
COMMUNICATIONS: —
French Lawsuits. — Automatic Ventilators. 224
NOTES AND CLIPPINGS. 224

THE *British Architect*, in commenting upon what we had to say about the burdensome and unreasonable load of responsibility placed on architects in this country by the curious condition of the law, and the unwillingness of the profession to insist upon the employment of clerks-of-works, thinks it very singular that the American architects should allow such a condition of things to continue. It says, what we all know, that to circumvent the rascality of a dishonest contractor, nothing but the constant supervision of a clerk-of-works is of the least avail, but it considers that it is unjust to the architect, and unfavorable to the interest of his client, to expect the architect either to furnish such supervision himself, or to pay some one else for furnishing it. "In England," it says, "it is difficult to imagine the provision of an efficient clerk-of-works as being a luxury to be provided at the expense of the architect;" and it adds that "No English architects, with any practice at all, would ever dream of trying to do without a clerk-of-works, nor would they ever dream of paying his salary out of their own pocket," and counsels American architects to unite in putting an end at once to "such an absurd practice." We are glad to know that the recent Convention of the American Institute of Architects took up this matter, and adopted what may be called a resolution preliminary to beginning to do something about it; and we hope that the Convention of the Western Association, to be held this month, will take a long step further.

WHERE would be, we think, very little difficulty in getting the new system generally adopted. In fact, there are symptoms that the public is ready to meet us more than half-way. Most men are tolerably reasonable in such matters, and the conviction that the anxious, harassed architect cannot, and ought not, to be expected to give a building the daily supervision necessary to secure the owner against the contractors' tricks is quite widely spread among owners, in connection, moreover, with the corresponding conviction, that nothing short of daily supervision is required for the purpose, and that as architects cannot fairly be expected to furnish or pay for it, the owner, in his own interest, should do so. If our architects would give up the struggle to please the greedy persons who think that a professional man cannot do too much for them, or be paid too little, and acknowledge that they cannot do justice either to themselves or their clients under the present system, we think the change which we all so much desire would be easily and quickly accomplished, with great benefit to all parties. The owners would certainly profit, by the security they would gain against the hidden vices of construction which ultimately cause them so much loss; the architects would gain, what they all need so much, leisure to study their designs and think over their plans, instead of spending their days in climbing ladders and inspecting caulked joints, and last, but not least, a very extensive field of employment would be opened to the young architects and assistants who must depend now only on office-work. In Europe nearly all young architects get their most valuable experience as clerks-of-works for some master of the art. They are well paid, are in constant communication with their principal, and enjoy the opportunity, which they can get in no other way, of seeing every consecutive step in the process of building, from the laying of the footings to the setting of the vane.

IN the discussion about clerks-of-works, it will be well for American architects to remember that there are several varieties of these functionaries. The best, of course, are young architects and assistants, who, if they have any talent, delight in the occupation of seeing a good design executed in brick and stone, and take pleasure in looking out that everything is carried along smoothly. Next to these come the professional clerks-of-works, who have a good deal of practical knowledge, and are often very faithful and useful, but are less to be depended upon than men of higher theoretical attainments in cases where an unusual construction, or an unfamiliar material, is to be employed. Under such circumstances the educated man interests himself to study from books, or other examples, the conditions necessary to success, and consults, as in honor bound, his principal, to make sure that the information he has acquired meets with the latter's approval, and to gain such additional knowledge as he can; while the mere practical man is apt to be afraid of showing his ignorance, and goes along blindly, often changing the design, without orders, to suit his own narrow experience, or involving the architect in some other way in annoyance and loss. After the ignorant practical man, and a long way below him in usefulness, comes the conceited person, who is sometimes a practical man and sometimes a theorist, but is equally worthless in either case. We have seen some of these gentry in various positions here, but the most conspicuous specimen yet described seems to have been the individual who acted as clerk-of-works for Mr. E. R. Robson, the architect to the London School Board, whose controversy with the Board in regard to certain improperly executed contract work, for which it sought to hold him responsible, is fresh in our readers' minds. As an illustration of the depth of insolence, inefficiency, and unfaithfulness to which this sort of assistant can descend, we know of nothing more striking than the sworn testimony of the person in question. It is hardly necessary to say that he, having been, by his own story, the one to whose negligence and incapacity the imperfect workmanship complained of was chiefly due, appeared as the principal witness against Mr. Robson, whose intentions he was hired to see properly carried out. The way in which he performed this duty can be best judged from his own words. He found, one day, as he alleges, that the plan sent from Mr. Robson's office for the school-house which he was supposed to be supervising showed a staircase in the upper story with insufficient head-room. Instead of making himself the insignificant alteration necessary to gain proper headway, or returning the plan to have the error rectified, if any existed, which the assertion of such an expert by no means proves, he sent a message to the office that there was "a mistake in the plans." He seems to have thought that Mr. Robson would immediately hurry to the spot, to bow the knee before his superior knowledge, and listen humbly to his suggestions for putting the matter straight. Unfortunately, Mr. Robson had something else to do, and sent one of his assistants to see what the trouble was. The assistant came and inquired for the plan, and asked to have the mistake pointed out to him. The lordly spirit of the clerk-of-works could not bend so far as to tell a mere subordinate what fault he found with the plan. He "did not care to furnish him with brains," to use his own expression on the witness-stand, and the assistant returned to the office without discovering any error. No further effort was made by this valuable person to have any correction made, and, when the time came, he had the staircase built as he conceived it to be shown on the plan, with such narrow head-room that people could only get through by crawling on their knees; and completed his remarkable services in regard to this portion of the

building by trying to have Mr. Robson compelled to pay damages on account of it.

THE city of Washington furnishes just now some instructive illustrations of the advantages and disadvantages of doing civil work under military care. As we have learned from the discussions about the Congressional Library, there is an idea prevalent at Washington to the effect that building operations, if supervised by an army engineer, are always carried out with inconceivable economy, perfection and dispatch, and that no amount of experience or training can enable a civilian who makes architecture or engineering his profession to compete in efficiency with a West Point graduate. Acting upon this notion, the direction of the Congressional Library Building was recently wrested from the architect to whom it was awarded, and handed over to a military man, just as another work, under the charge of another military man, was completed. Now, it appears that the last-mentioned work, the construction of the Washington Aqueduct, has not reflected such brilliant renown upon its warlike superintendents as the debates in Congress on the Library would lead us to expect. Instead of masonry, the aqueduct shows in many places immense voids, while, where stonework was used, it was put in with about one-sixth the proper allowance of cement, by unskilled men, so that it is of little value, and, according to the last accounts, it is probable that the tunnel, the most important part of the aqueduct, built at an enormous cost, will be abandoned, as unfit for use, and too bad to be worth repairing. Of course, we know well enough that General Casey will prevent any such mishaps with the Library Building, but he is said by the newspapers to have made a remark in regard to it which is worth reflecting upon by those who think that architects are advantageously replaced in their own business by military men. Some reporter, in the course of his inquiries, asked General Casey whether the modified Library Building, which he is now, by direction of Congress, engaged in carrying into execution, would accommodate the books after it was done. The General replied, with soldierly promptness, that he did not know, and did not care, whether it would or not. His orders were, he said, to erect a building which should not cost more than four million dollars. These instructions were perfectly definite, and he proposed to carry them out. Nothing was said in his orders about having the building accommodate books, and it was not for him to concern himself with matters not commended to his attention.

IT would be interesting to hear what Congressmen would say to an architect who announced that he did not care whether the building he was about to erect for the Government would accommodate the service for which it was intended or not, yet there is no question that General Casey is right in his view of his duty. An architect would be bound to tell the Government, what is certainly true, that four million dollars, the present limit of the appropriation, will not cover the cost of a good and substantial building large enough to accommodate the Library of Congress, with the additions which it will very soon accumulate. Mr. Smithmeyer informed Congress of this obvious fact, and was ignominiously driven out of office in consequence, but General Casey is not asked about that point, very properly contenting himself, as a military man, with the instructions issued to him; and the effect appears to be that the United States is being rapidly endowed with a building not large enough for its purpose, incapable of alteration or increase of size without enormous expense, and thus practically useless, except as a temporary shelter for some of the public books, simply because Congress has seen fit to decree that a ten-million-dollar building shall be built for four millions, and has ordered an army officer to carry out its mandates, so as to get rid of the expostulations of an architect conscientious enough to tell the truth about their practicability.

SOME interesting explorations have been going on at Mycenæ, under the direction of the Greek Government, which took up the work at the point where Dr. Schliemann abandoned it. It has been discovered that the city is nearly surrounded by groups of tombs, cut in the rock, much like those of Egypt. Each tomb consists of a gallery, sometimes sixty or seventy feet long, excavated in the side of one of the rocky hills, from which open chambers ten or twelve feet square. These chambers contain skeletons, never less than two, and often many more. The appearance is that each chamber belonged to a family. When a member of that family died he was placed in the tomb, where slow decomposition took place, until only the bones were left. On the death and burial of a second member of the family, the remains of the first were often moved aside, to make room for the new-comer, and in many cases, after the tomb had become uncomfortably crowded, a small pit was cut in the back of the chamber, into which were piled the bones which had become detached, so as to clear the place and make it neat. Very few manufactured objects have been found in the tombs. A few necklace-beads, of rock-crystal or onyx, rudely ornamented, have been found, together with two gold rings and some bits of ivory, one piece being carved into a human head, and a few weeks ago was discovered a large vase, nearly eight inches in diameter, with one handle, all of silver, with eight human figures in gold inlaid around the top, and inlaid gold ornaments underneath. It is believed that these antiquities date from at least the twentieth century B. C., and the ornaments on them show a marked Oriental character.

THE great competition for the rebuilding of the front of Milan Cathedral has terminated in the award of the first prize, eight thousand dollars in money, to Signor Guiseppe Brentano, of Milan. The first competition, which was open to all the world, ended in the selection of fourteen plans, the authors of which were invited to take part in a second contest, and this second competition is the one which has just been decided. Out of the fourteen designs, the judges unanimously selected four, those of Beltrami and Brentano, of Milan, Nordio, of Trieste, and Deperthes, of Paris, which were then voted upon separately. One of the designs, that of M. Deperthes, showed towers, with spires, on each side of the main front portal, and the first question put to the judges was whether any plan with spires should be considered eligible to the first place. Nothwithstanding the eloquent advocacy of a Milanese member of the jury, the majority voted that no designs with towers or spires should be approved, and, M. Deperthes being thus eliminated from the race, the choice among the remaining three fell upon Signor Brentano. M. Deperthes, who himself writes to *La Semaine des Constructeurs* a fair and temperate account of the competition, says that he is not convinced by the result that a pair of towers would not improve the façade, and we are very much inclined to agree with him. Although we did not greatly fancy the towers of M. Deperthes's original design, we think that most people would say that the present front of the Cathedral is low and insignificant, apart from its ugly detail, and that a pair of well-studied spires might be made to improve it very much.

HOWEVER that may be, we can console ourselves with the thought that a very interesting competition has been decided in the most careful manner by some of the best judges in the world, and the result is sure to be satisfactory. Signor Brentano will much belie the reputation which he has gained by the competition, as one of the most distinguished of Italian architects, if the detail of his work is not beautifully designed and executed, and he has ample inspiration in Milan for success in the semi-Northern Gothic in which he must work. In reviewing the original competition, it is curious, as well as instructive, to notice the way in which the unsuccessful competitors seem generally to have erred by the adoption of some eccentric motive or detail, which has destroyed the value of a design perhaps otherwise very meritorious. For example, the plan of Hartel and Neckelmann, of Leipsic, one of the simplest and best of all in our opinion, and adorned with a pair of noble spires, is spoiled by putting a triangular porch in front of the principal door, after the fashion of that at Ratisbon, which we should not have supposed that any architect would wish to imitate. In a similar way, Mr. Brade's front, an effective piece of what we might call Genoa or Orvieto Gothic, comports poorly with the fantastic dome behind it, and the want of harmony is only made more conspicuous by the attempt made in the published drawing to conceal it by representing the building in perspective, with the dome nearly hidden behind one of the flanking towers of the façade. We might go on and point out various other illustrations of the maxim that it is the details that the architect did not think about, or got over too easily, or left until there was not time enough to study them, that generally insure defeat, but any one who has preserved the published sketches of the designs can find them for himself.

BUILDERS' HARDWARE.[1] — XI.

DOOR-STOPS.

Fig. 137. Door-bumper. J. B. Shannon & Sons.

SOME form of stop is always desirable in order to keep the door from striking the finish when swung open, or breaking the plastering. The commonest form consists of a wooden knob screwed straight into the base and tipped with rubber. The variation from this is a wooden-knob, which is screwed into the floor and has the rubber-tip on the side, to be used when the door does not swing against the wall, but has to be stopped at some point. These stops are made in birch, maple, ash, oak, chestnut, cherry, walnut and mahogany and are listed at $5.00 per gross for birch to $6.50 for mahogany. They are made in two sizes, 2½ and 3 inches long; the wood is turned and a gimlet-pointed screw is firmly attached to the stop, so that it can readily be put in place by hand. The prices are the same whether the rubber tip is on the side or the end. They are also made with a rubber ring entirely encircling the knob, the list price being $12.00 per gross.

The Meriden Malleable Iron Company manufactures elastic-headed screws which are used more for furniture than for doors, but which might be desirable in some cases. They consist simply of a half-round head which is covered in upholstery of some kind and fitted with a gimlet-pointed screw. These cost from $11.00 to $17.00 per gross, list price, depending upon the material with which they are covered. J. B. Shannon & Sons, manufacture a door-bumper shown by Figure 137, which is intended to prevent jar and noise in shutting the door: it consists of a cup with a brace attached to be screwed to the face of the door; a rubber ball is pressed into the cup so that it will not fall out. A piece of rubber made fast to the jamb casing over the door, for the ball to strike against, completes the contrivance. The rubber over the door may be increased or lessened in thickness so that when the rubber ball comes in contact with it the compression will allow the door to latch. This device effectually prevents any slamming of the door. The list price is $1.00 each. The only possible objection to its use would be that the head might prevent the door from being latched properly.

DOOR-HANGERS AND ROLLERS.

The commonest form of door-rollers are those used for barn-doors. Usually a barn-door slides on rollers or sheaves which are applied to the inner face of the door and run over a metal track secured to the floor. There are many kinds of large sheaves and rollers manufactured for barn-doors, which are too simple to require any illustration. The commoner kind consists of a large wheel with a steel or metal axle. The better kind of barn-door rollers are provided with anti-friction axle bearings; that is to say, the axle of the wheel revolves in a cycle of small pins or rollers by which the friction is considerably reduced, and the wear on the bearings very materially diminished. Figure 138 is an ingenious device for a barn-door-roller, the working of which will be readily apparent from the drawing. The inner plate, *A*, is screwed directly to the door, through the openings in the wheel, *B*, which revolves on the anti-frictional bearings.

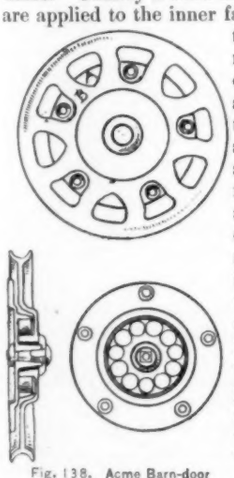

Fig. 138. Acme Barn-door Roller. Moore Mfg. Co.

Figure 139 shows a form of barn-door-rail, intended to be used with a wheel which shall rest on the flanges and not bear at all on the upright portion. In this way the wheel will clear away any collection of snow or ice by its own action and enable the door to roll easily.

The standing objection to barn-door-rollers which are applied to the bottom of the door, is that they are too easily thrown off the track by obstructions and also that the track itself is apt to get in the way and be a bother in driving over it. The greatest amount of ingenuity has been expended upon door-hangers in which the door is suspended from a track at the top. The only objection which is to be urged against this manner of arranging a sliding-door, is that in case of a violent wind the door would be forced inward. This difficulty can be in a measure obviated by the use of some form of stay-roller, such as Figure 140, which can be attached so as to prevent any lateral motion

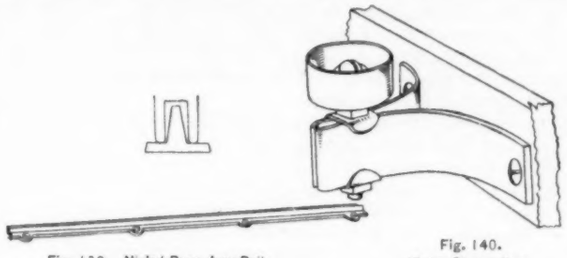

Fig. 139. Nickel Barn-door Rail. Coleman Hardware Co.

Fig. 140. Victor Stay-roller. Victor Mfg. Co.

of the door. This form of stay-roller is also used for doors which slide on sheaves at the bottom, taking the place of an overhead groove.

There are really but two distinct varieties of barn-door-hangers; the first is represented by Figure 141, and consists of a single wheel running on an overhead-track and attached to a hanger which is screwed on to the inner face of the door. The same form of hanger is made to be used with an iron rail. This form is rather old but is very good and we should imagine would give little trouble. It is made with anti-friction bearings. The second variety of hanger is one in which the axle is not fixed but travels along a single bearing beam, as in the "Moody Hanger," Figure 142, which is one of the simplest of this kind. In this the axle bears on two bars, and the uprights to which the bearing bars are secured, are placed sufficiently

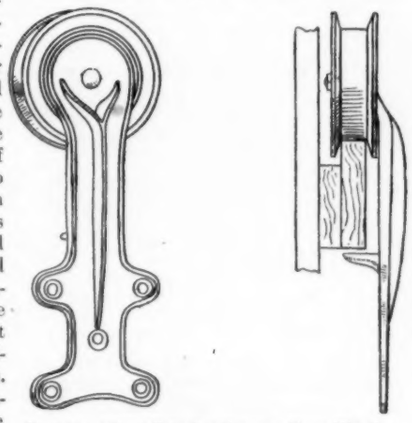

Fig. 141. Climax Barn-door Hanger. Moore Mfg. Co.

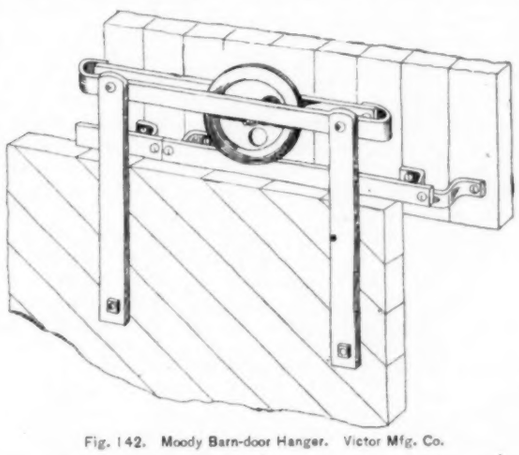

Fig. 142. Moody Barn-door Hanger. Victor Mfg. Co.

far apart to admit of the axle having enough play for the opening of a single door. The rail and brackets are made of steel and the wheel has a steel axle.

The "Victor Hanger," Figure 143, is a slight improvement over the "Moody" in that the bearing is on a single bar instead of on two; and that the wheels work on each side of a high, ridged track which prevents them from slipping off or becoming interfered with.

The "Lane Hanger," Figure 144, is very similar to the

[1] Continued from page 193, No. 670.

"Moody" though the arrangements of the supports is somewhat different.

All of the foregoing hangers are made of wrought-iron or steel, with steel or chilled-iron bearings. Several kinds of hangers are made with malleable iron, such as the "Nickel," Figure 145, which follows the pattern of the "Moody Hanger." The "Nickel Hanger" is also made in steel, with a slightly different shape. The "Hatfield Hanger," Figure 146, also in malleable iron, is a form after the pattern of the "Lane," on which the patent seems to have run out; at any rate, a similar form is made by several of the manufacturers, and the principle embodied in the "Hatfield" and the "Moody Hangers" is the one which is usually considered to be the most satisfactory; that is to say, one in which the axle bears on two parallel plates and works in slots; indeed, this principle is applied to nearly all the most successful hangers, both for barn-doors and parlor-doors.

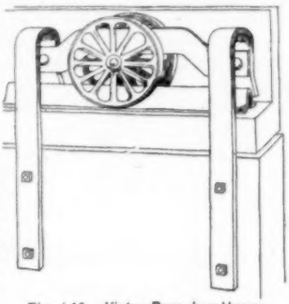

Fig. 143. Victor Barn-door Hanger. Victor Mfg. Co.

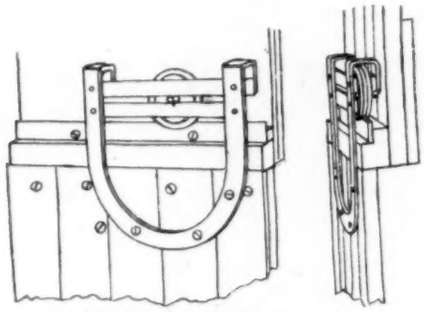

Fig. 144. Lane Barn-door Hanger. Lane Bros.

For parlor doors many builders and architects still prefer sheaves mortised into the bottom of the door. The rail, which is a necessary part of this arrangement, is admitted to be a trouble, but the rollers are so easily taken out that the rail is retained. There seems to be an idea with many people that the overhead hanger more easily gets out of order, and that it is more complicated. This is a mistake, for there is hardly a hanger in the market that will not give satisfaction if properly applied, while any one who has had experience with sheaves and rail at the bottom can testify to the trouble which will sometimes occur, with the settlement of the woodwork throwing the door out of plumb or obstructions getting on the track and throwing the wheels off. Some of the overhead hangers require more care in setting, and others have some special adjustment which must be understood; but the prineiple on which they all work is so simple that, to the uninitiated, there seems to be but little choice between the various kinds.

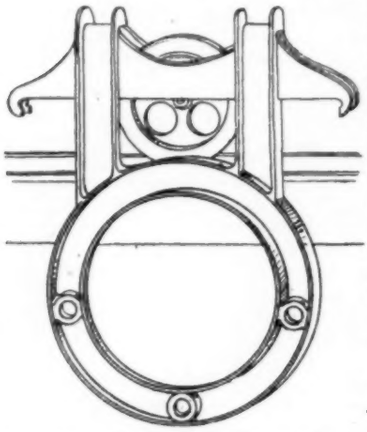

Fig. 145. Nickel Barn-door Hanger. Coleman Hardware Co.

The ordinary mortised sheave, of which Figure 147 is a type, runs on a brass rail, which is generally made with a raised section, though a form is sometimes used which is channelled instead of being raised. The former will be something to stub the foot against; the latter will collect dust. The only form of rail in the market, which presents neither of these difficulties, is the "Climax," Figure 148. This consists of a double brass track with a central strip, which is held flush with the two sides by springs inserted at intervals in the track. A special form of wheel is manufactured to go with this rail. The wheel, in passing along over the rail, presses down the central strip, forming a groove for the wheel to run in. When the door is opened, the springs force the flexible central strip up again, so that when the doorway is entirely clear the appearance is of a single brass plate perfectly flush with the floor. The list price of this rail is sixty cents per foot in brass.

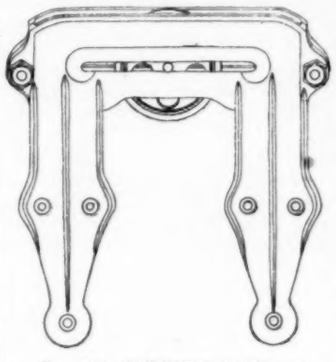

Fig. 146. Hatfield Barn-door Hanger.

Besides the common pattern of mortised sheaves, shown by Figure 147, there is another form which works more easily, made on the same principle as the "Hatfield" barn-door hanger. This is shown by Figure 149. This sheave is made in five sizes, from two-and-one-half inches to six inches in diameter of wheel and costs from $1.50 to $4 per set of four sheaves.

Parlor-door hangers are usually arranged to run on a wooden or metal track which is bolted to the side-studding. There are one or two points which should be considered in judging of any door-hanger as ordinarily applied. In most houses the studs which form one side of the sliding-door pocket are made to rest on something pretty solid, a foundation wall, or, at least, a heavy timber, while on the other side of the pocket the studs are supported on the floor-joist, and are left to settle with the shrinkage of the timbers, thus bringing about a difference in level of the two sides of the pocket. It may, then, be stated as a general rule that the best form of hanger would be that which is supported on one side only, since if any inequality of settlement takes place, it does not affect the hanger. Another consideration is, that it would be well to have the door-hangers so arranged that in case the door

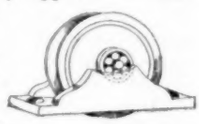

Fig. 147. Sliding-door Sheave. Russell & Erwin.

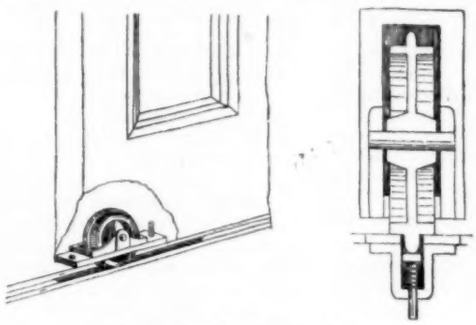

Fig. 148. Climax Rail. Climax Rail Co.

should not hang perfectly plumb, there would be no inequality of bearing on the axles of the wheels. It will be seen that this is perfectly possible, and that it has been considered in some of the forms of door-hangers.

One of the earlier patents is the "Moore" parlor-door

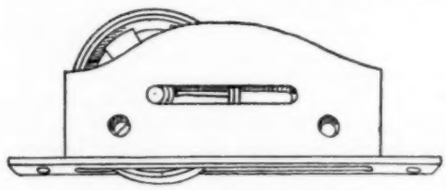

Fig. 149. Hatfield Anti-friction Sheave.

hanger, Figure 150. This is a very good form in the main, being hung by a single rod which is mortised into the top of the door. The adjustment may be obtained by turning up the nut at the bottom of the rod, through a hole cut in the edge of the door in the same manner as a stair-rail bolt is turned up. The difficulty is, that the hanger cannot readily be readjusted

when once set. Another of the early forms which has since been but little improved upon, is the "Warner" hanger, Figure 151. This consists of two sets of double wheels connected by a rod, and working directly on the double track secured to each side of the door-pocket. The manner of supporting the door is much the same as with the "Moore" hanger, except that in the "Warner" the supporting rods can be got at after the door is finished by means of a face-plate on the edge of the door. The wheels are made perfectly flat, and it is claimed that under no combination of circumstances can they run off the track. The axles of the wheels are attached to the connecting rod by means of a universal bearing, thus enabling the weight of the doors to bear equally upon both tracks, no matter how much out of plumb or level they may be. A somewhat similar door-hanger is that shown by Figure 152, manufactured by the Reading Hardware Company. In this variety, however, the adjustment is entirely from the top of the door, and no mortise is required. The axles are not attached to any part of the hanger, but work in the slot somewhat on the principle of a "Victor" hanger.

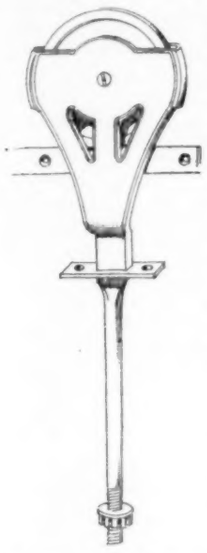

Fig. 150. Moore's Anti-friction Parlor-door Hanger. S. H. & E. Y. Moore.

Figure 153 shows a door-hanger which is very popular, and which for simplicity and perfection of construction is one of the best yet produced. The wheels run on two flat wooden tracks, one secured to each side of the studding. The axles bear on the short connecting rod which is made sufficiently long to allow for the run of an eight-foot door. The rod being round there will never be an even bearing. The hangers are adjusted by means of a sliding screw-joint which is operated from the edge of the door, and which, by forcing the hanger away or drawing it towards the edge of the door, raises or lowers the bearing rod.

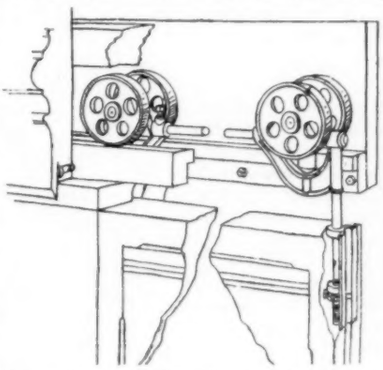

Fig. 151. Warner Parlor-door Hanger. E. C. Stearns & Co.

A very simple application of the same principle is embodied in the "Nickel" parlor-door hanger, Figure 154. This consists of a double set of flanged wheels, which run on a double track suspended by iron hanger-rods attached at intervals to a cross-piece at the top of the door-pocket. The axles of the wheels bear against a half-round bar, which is secured by upright bars to the top of the door. The hangers are adjusted by turning up the hanger-rods in the top of the pocket, thus lifting the track bodily. One objection to this form is that it requires considerable width of pocket — four-and-one-half inches.

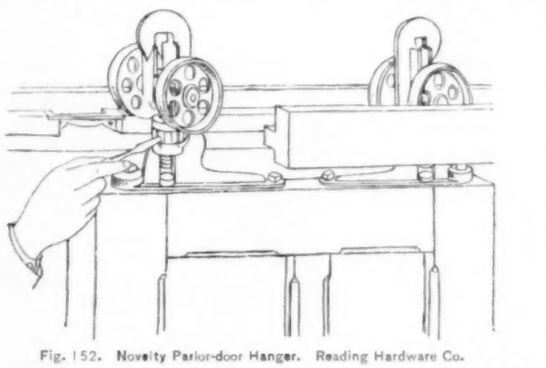

Fig. 152. Novelty Parlor-door Hanger. Reading Hardware Co.

Figure 155 illustrates the "Richards" hanger, which, with the "Prindle," rather leads the market just at present. The principle is almost exactly the same with both forms, except that in the "Richards" the axle has a flat instead of a round bearing, and the wheels are grooved. The "Prindle" manufacturers claim, that the flat wheel is preferable; the "Richards," on the other hand, maintain that the flanged wheel is more desirable. There is really very little to choose between the two kinds.

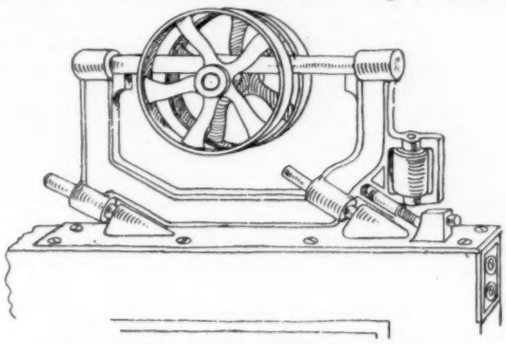

Fig. 153. Prindle Parlor-door Hanger. Prindle Mfg. Co.

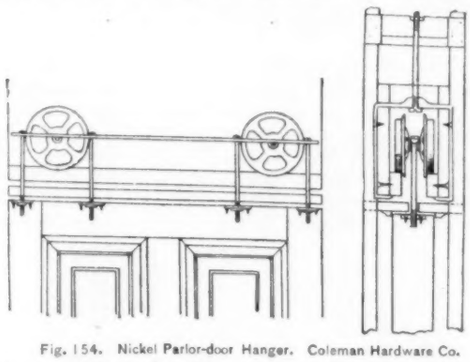

Fig. 154. Nickel Parlor-door Hanger. Coleman Hardware Co.

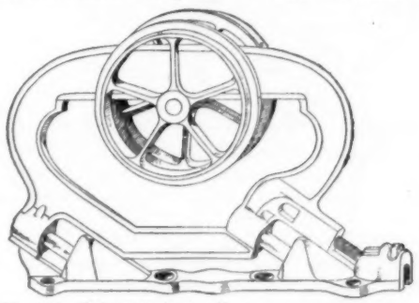

Fig. 155. Richards Parlor-door Hanger. Wilcox Mfg. Co.

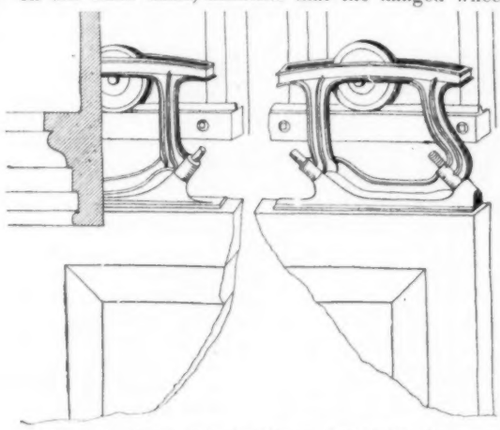

Fig. 156. Paragon Parlor-door Hanger. Dunham Mfg. Co.

The American Manufacturing Company has a parlor

door-hanger on the market which is essentially the same as the "Richards" hanger. The "Paragon" door-hanger, Figure 156, is on the principle of the "Moody" barn-door hanger previously described. It consists of a single grooved wheel running on a rail secured to one side of the pocket, the axles bearing against two flat surfaces. It would seem as though this fulfilled the conditions of a perfect door-hanger more fully than anything else in the market. It can be adjusted with very little trouble; and as the centre of support is directly over the centre of the door, there is no tendency to bind; while as the track is secured to only one side of the door-pocket, the possible effects of shrinkages and settlements are reduced to a minimum.

A form of door-hanger which is essentially the same as this, but in which the axle of the wheels work in a slot on the prin-

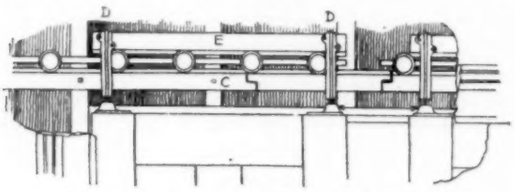

Fig. 157. Emerson Parlor-door Hanger. B. D. Washburn, Agent.

ciple of the "Hatfield" sheave, has been manufactured by Burditt & Williams, for one of the Boston builders, but has received no patent, and is not really in the market.

The "Emerson" door-hanger, Figure 157, is yet another variety, and represents in some respects a different principle from any of the former, in that the rollers are entirely separate and distinct from each other, being connected merely by a thin

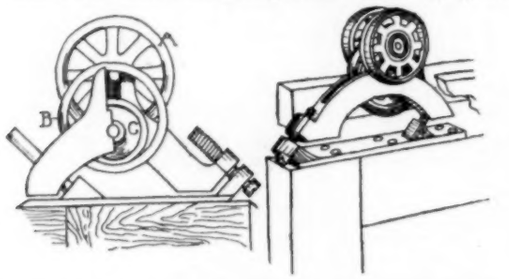

Fig. 158. Endless Anti-friction Parlor-door Hanger. Reading Hardware Co.

strip of wood notched over the axles. The rollers bear on the wooden rail *C*. The hangers *D*, to which the door is directly attached, are fastened to a rider bar *E*, which bears directly on the rollers. This form of hanger is very effective, does not get out of order, and works very smoothly. Adjustment is obtained by a small set-screw in the attachment of the hanger. The track is fastened to one partition only.

Figure 158 is a very ingenious combination of the principles of the "Warner" and the "Prindle" hangers. It consists of a set of double, flanged wheels *A*, bearing on two tracks, and bolted to each side of the pocket. The axle of the double wheel supports a ring *B*, which in turn supports a plain, grooved, pulley-wheel. The axle of the pulley-wheel turns in iron flange-plates which are fastened to the top of the door. In this way the friction is greatly reduced; and the principle of the continuous run of the axle, which is embodied in the "Warner" hanger, is here provided for by means of the ring connected with the flanged wheels, and with the lower pulley. The hanger is adjusted by a turn-screw near the edge of the door. The point of support of the hangers is always in the same relative position to the door, thus overcoming one of the weak points of the horizontal, anti-friction hangers in which the wheels travel back and forth from one end to the other, thus continually changing the strain on the screws.

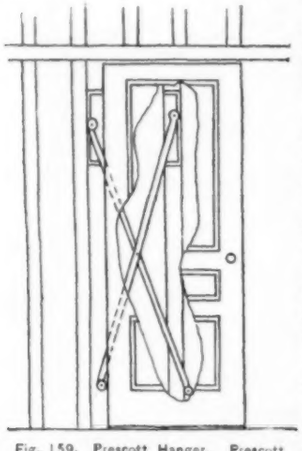

Fig. 159. Prescott Hanger. Prescott Mfg. Co.

The following table gives the relative prices of the various door-hangers that have been described:

TABLE OF DOOR-HANGERS.

Fig.		Per set of four.
138	Acme barn-door roller, 8 inch wheel	$3.00
141	Climax door roller hanger	3.00
142	Moody door roller hanger	3.20
143	Victor door roller hanger	4.40
144	Lane door roller hanger	2.30
145	Nickel barn-door roller hanger	3.50
146	Hatfield barn-door roller hanger	4.50
147	Parlor-door sheave, anti-friction	2.00
149	Hatfield parlor-door sheave	2.50
150	Moore parlor-door hanger	4.25
151	Warner parlor-door hanger	5.50
152	Novelty parlor-door hanger	3.50
153	Prindle parlor-door hanger	5.00
154	Nickel parlor-door hanger, (approximately)	3.50
155	Richards parlor-door hanger	5.00
156	Paragon parlor-door hanger	4.50
157	Emerson parlor-door hanger	5.00
158	Endless parlor-door hanger	3.75

There is still another distinct type of door-hanger, one which is unique of its kind, and for certain purposes is decidedly better than anything else in the market, though not always applicable or always desirable: This is the "Prescott" hanger. It is difficult to illustrate this hanger properly; it should be seen in order to appreciate fully its workings. Figure 159 is the common form of hanger, consisting essentially of two flat bars joined, scissors fashion, in the centre. The lower end of one bar is fastened to a pin on the jamb of the pocket. The lower end of the other bar is fastened to a pin on the back of the door. The upper end of the bar which is fastened to the jamb, works with a roller in a slot on the back of the upper part of the door, while the upper end of the other bar works in a small slot let into the upper part of the jamb-pocket. A little reasoning will show one that the door in this manner is held absolutely free from either the top or the bottom of the door-opening, and can be easily moved forward or backward.

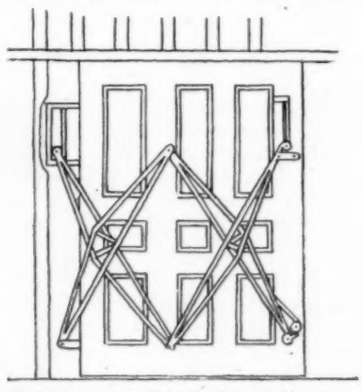

Fig. 160. Prescott Hanger. Prescott Mfg. Co.

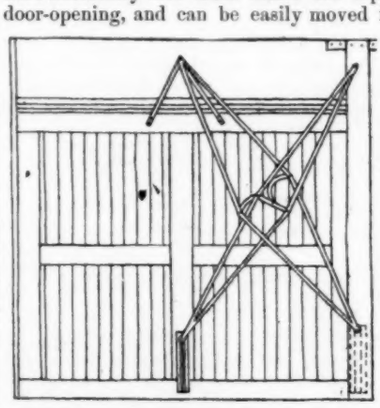

Fig. 161. Prescott Hanger. Prescott Mfg. Co.

It cannot settle without the scissors part spreading out, and as the movable roller ends are on opposite sides, that is, one on the joint and one on the door; any tendency to spreading out of the rollers is counteracted by the opposite ends of the bars, which are always on the same level. In practice, the hanger, when properly set, works to perfection. The door never can bind, but can be operated by the slightest pressure in one direction

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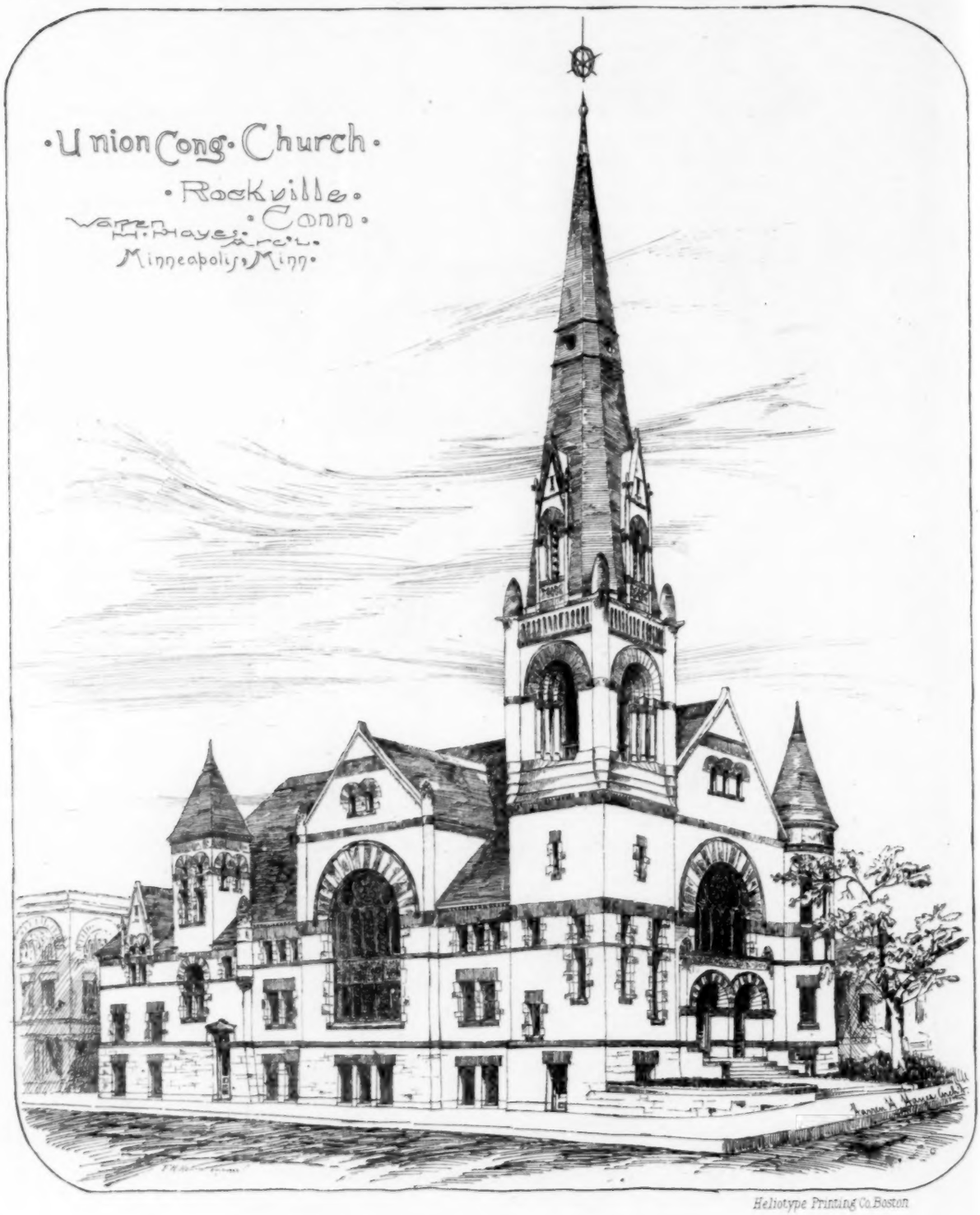

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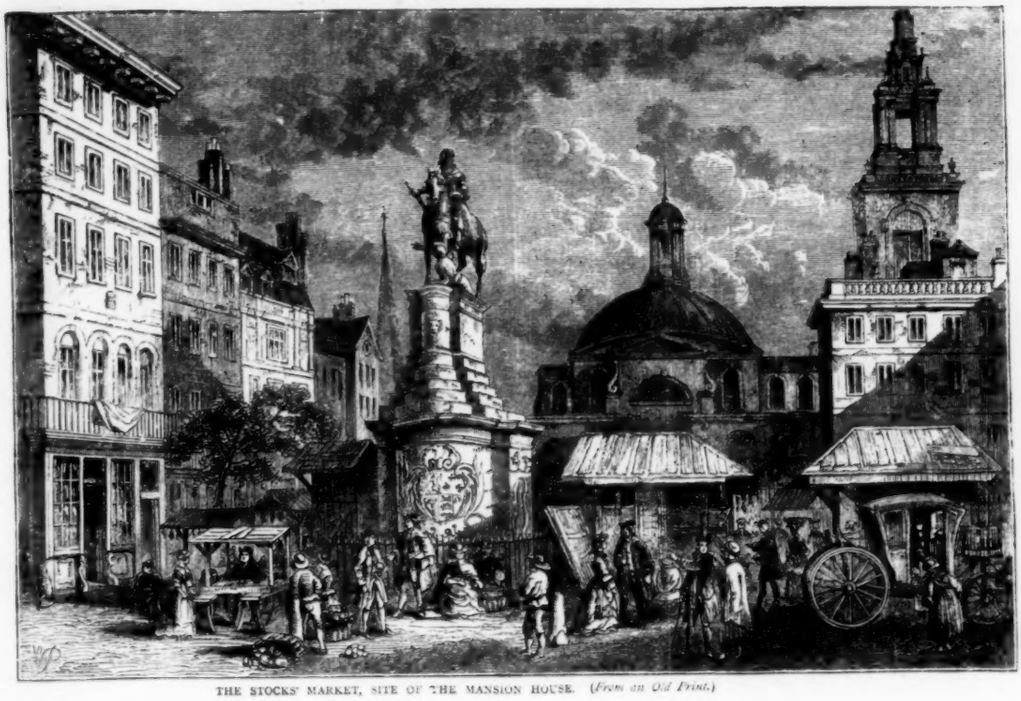
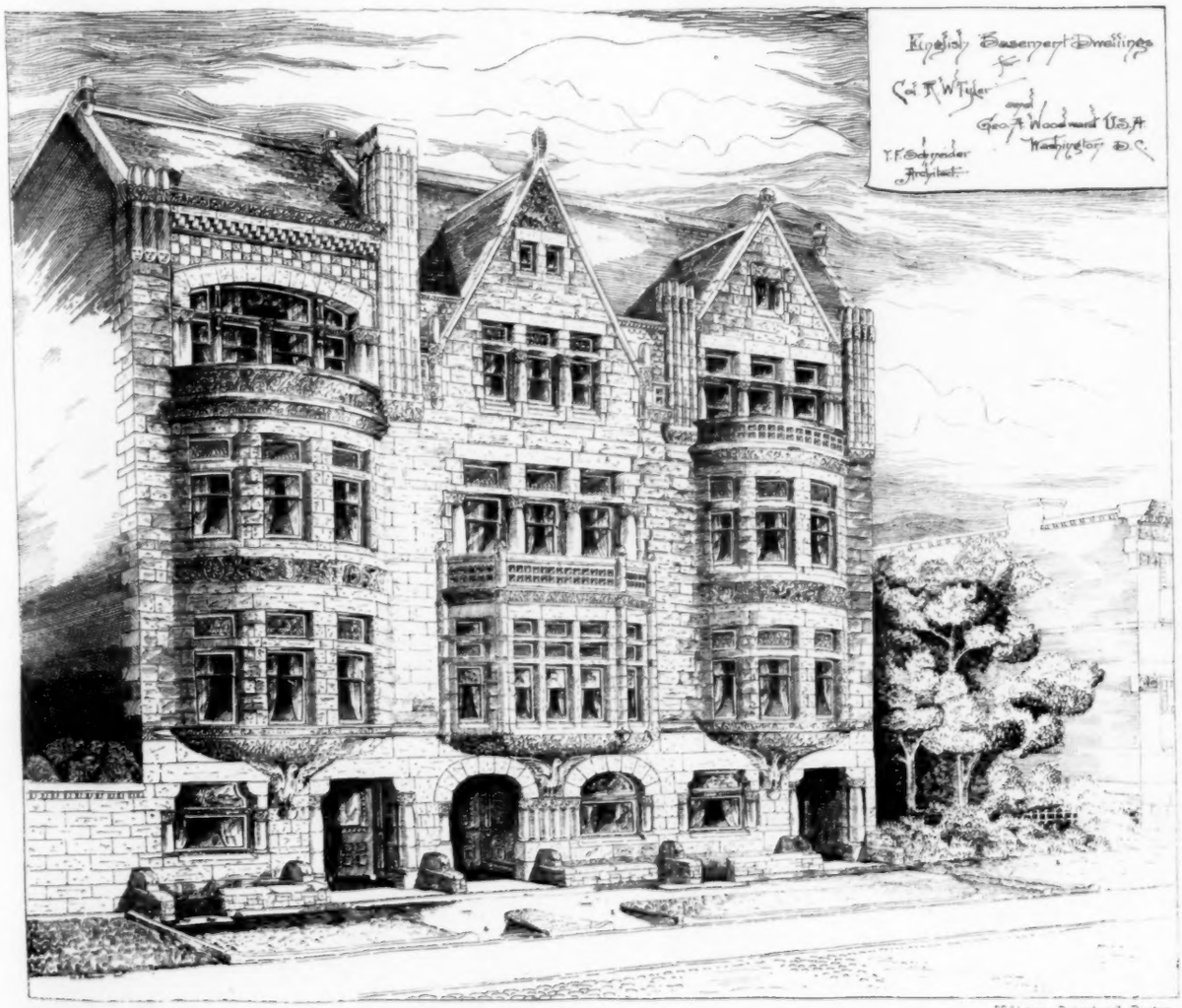


THE STOCKS' MARKET, SITE OF THE MANSION HOUSE. *(From an Old Print.)*

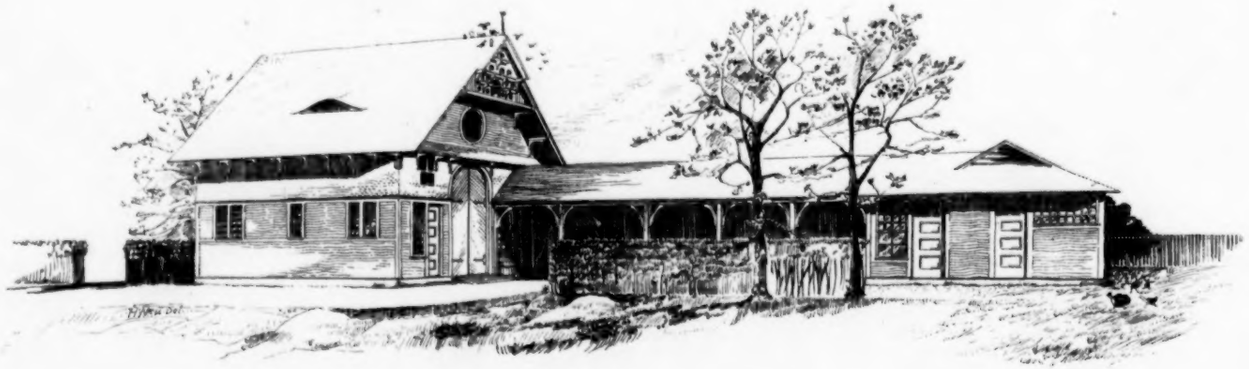


Heliotype Printing Co. Boston.

No. 672 American Architect and Building News, Nov. 10, 1888

OUT BUILDINGS FOR A COUNTRY HOUSE

R.H. ROBERTSON : ARCH'T.



BARN

STABLE

GARDENERS COTTAGE

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American Architect and Building News, Nov. 10, 1888 No. 672

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House for F. H. Cloud Esq.
Walnut Hills Cincinnati, O.
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Proposed

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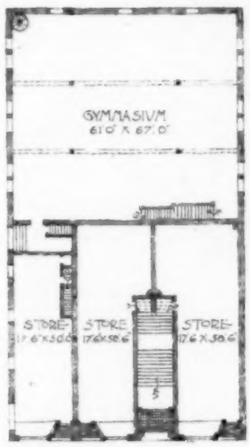
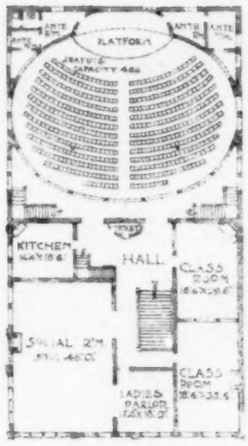
LONG STAFF & HURD, ARCH'TS



FIRST· FLOOR·



THIRD FLOOR

Heliotype Printing Co. Boston

J. J. Deery, Architect

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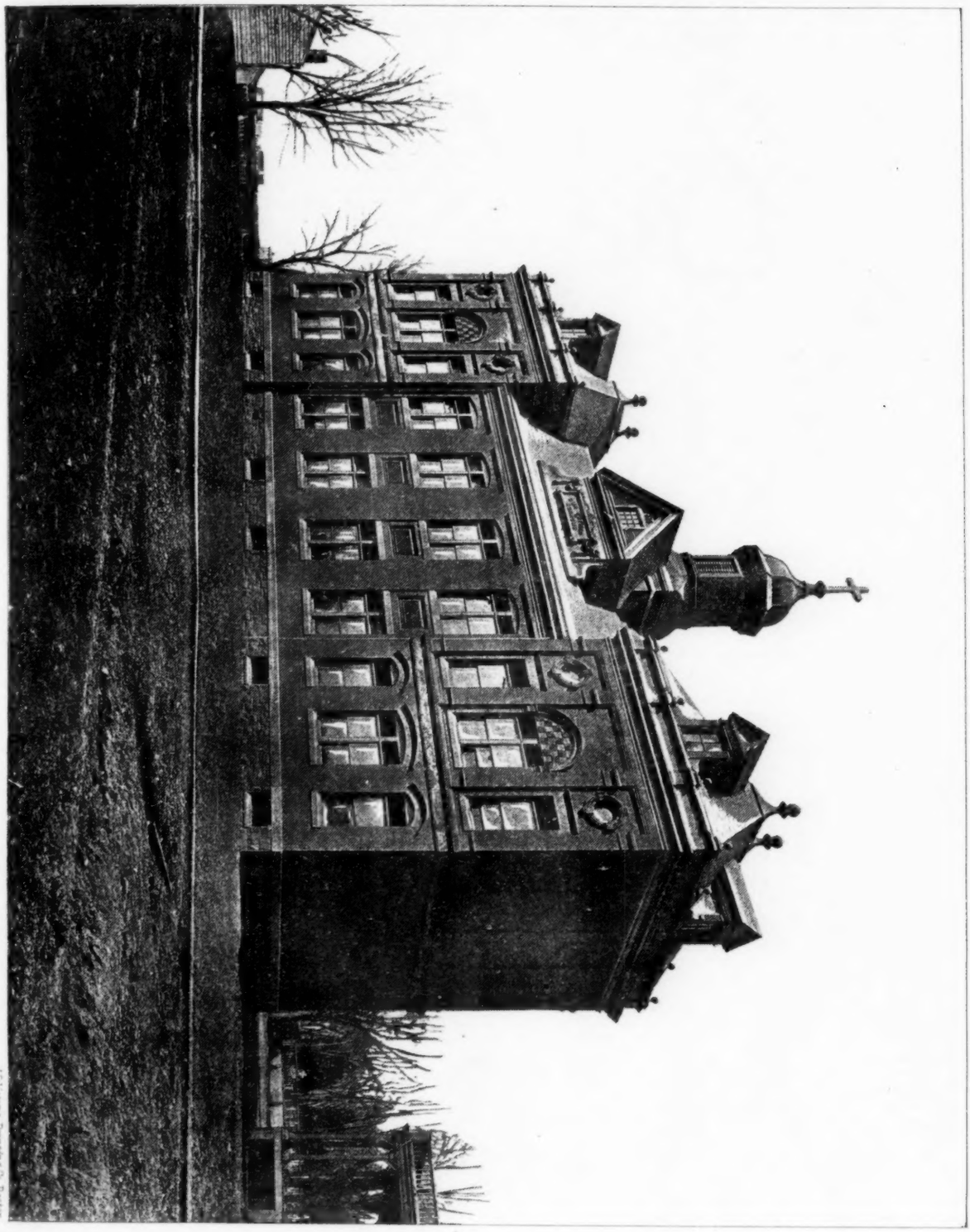

Our Mother of Sorrows Schoolhouse, Phila.

J. J. Deery, Architect.

Heliotype Printing Co. Boston.

or the other. Figure 160 shows a compound hanger on the same principle for use in very wide doors. The difference is simply that there are two hangers joined by bolts instead of one. Figure 161 shows a trussed hanger, which is used for doors that are wider than they are high. It may be said, incidentally, that these door-hangers can be exactly reversed; that is to say, the fixed ends may be at the top instead of the bottom.

The "Prescott" hanger is used to great advantage for elevator doors, as it permits of an opening the entire width of the car, if desired, while the ordinary width would be half that size. In such a case, a door across half of the opening is hung with ordinary butts, and the rest of the space is closed with a door hung by "Prescott" hangers to the first. The whole, or a part of the opening, can then be left unobstructed for the removal of boxes or trunks. Hangers for this purpose can be made of bronze, so as to present a neat appearance. These hangers are also used to advantage for barn-doors, car-doors, etc., and for any places where the hangers are exposed. The only objection to their use for parlor-doors, is that they have to be put on before the plastering is applied, and they are somewhat less easily adjusted. They also take up considerable width in thickness of the pocket; still, they work so beautifully that they deserve all the popularity that they have enjoyed.

The prices of the ordinary form of Prescott hangers for inside doors, are as follows:

Doors.	
2½ x 8½ x 1½ inches	$ 3.25
3 x 9 x 1½ inches	4.25
3½ x 9 x 1½ inches	5.25
4 x 9 x 1½ inches	6.25
4 x 10 x 1½ inches	6.75
4½ x 10 x 1½ inches	7.50
5 x 10 x 1¾ inches	8.50
5½ x 12 x 2 inches	9.50
6 x 12 x 2½ inches	10.50

[To be continued.]

THE ILLUSTRATIONS.

[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

SEMINARY OF ST. SULPICE, MONTREAL, CANADA.

[Gelatine Print, issued only with the Imperial Edition.]

UNION CONGREGATIONAL CHURCH, ROCKVILLE, CONN. MR. W. H. HAYES, ARCHITECT, MINNEAPOLIS, MINN.

THE basement of this building is now under way. The completed structure will cost $60,000 and be finished next season. Materials: Monson granite, Long Meadow brownstone and red brick.

ENGLISH BASEMENT DWELLINGS FOR COL. R. W. TYLER AND GEORGE A. WOODWARD, U. S. A., WASHINGTON, D. C. MR. T. F. SCHNEIDER, ARCHITECT, WASHINGTON, D. C.

THE cost of these buildings will be about $65,000.

THE STATUE OF CHARLES II, IN THE STOCKS MARKET, LONDON.

SEE article on "Equestrian Monuments" elsewhere in this issue.

OUT-BUILDINGS NEAR A COUNTRY HOUSE. MR. R. H. ROBERTSON, ARCHITECT, NEW YORK, N. Y.

HOUSE FOR F. H. CLOUD, ESQ., WALNUT HILLS, CINCINNATI, O. MR. S. E. DES JARDINS, ARCHITECT, CINCINNATI, O.

Y. M. C. A. BUILDING, BRIDGEPORT, CONN. MESSRS. LONGSTAFF & HURD, ARCHITECTS, BRIDGEPORT, CONN.

OUR MOTHER OF SORROWS SCHOOL-HOUSE, PHILADELPHIA, PA. MR. J. J. DEERY, ARCHITECT, PHILADELPHIA, PA.

RAISING A SUNKEN VESSEL BY GAS. — A somewhat remarkable thing took place in the river just below Evansville, Ind., recently. A few days before, the steamer *Robert B. Carson* collapsed and sank in forty feet of water, together with thirty head of cattle confined on the lower deck. For two or three days an effort was made to raise the boat, but the project was abandoned. On Saturday morning, however, to the surprise of one of the harbor boats, the pilot-house and hurricane-deck of the *Carson* suddenly appeared above the water. When a crew was sent down, the steamer was floating along, upheld by some mysterious agency. This was subsequently traced to the cattle themselves, whose bodies had become inflated by gases generated in the carcases, and actually had lifted the steamer to the surface. — *N. Y. Evening Post.*

MEDIÆVAL HOUSES.[1] — V.

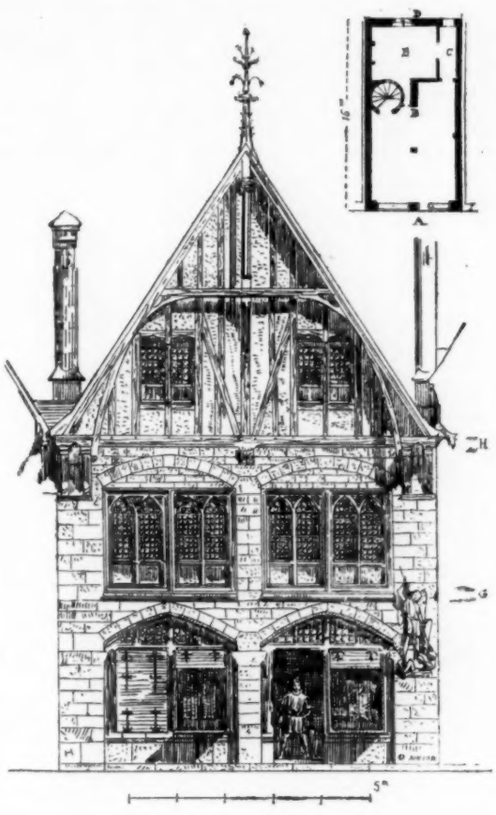

Fig. 20.

FIGURE 20 is a house of masonry and wood, sketched at Châteaudun, in 1841. The ground-floor and first-story are built in stone, the party-walls in rubble masonry, and the rear wall on the court in stone. On the ground-floor (see plan *A*,) and opening upon the street is a large store, with columns through the middle and a partition-wall *B*, in the rear. A large beam, carried on the cap of the pier in the middle of the front, on the central posts and on the partition-wall, supports the joists. A lighted spiral staircase ascends to the first and second floors. From the passage, *C*, one enters the court, *D*, and a back room, *E*. On the first story the plan is the same, a large beam being carried across the front wall to bear the floor-joists. To obtain the greatest possible amount of light on the street-front the builder has joined two relieving-arches in the thickness of the wall, under which broad windows are set. There are two rooms on the top floor under the roof. A pair of rafters projects beyond the wall and shelters it. They are carried on the ends of the plates, relieved by brackets, and on the end of the middle purlin, similarly supported. The floor-rafters are laid at *H*, and *G*. The construction of this house assigns it to the beginning of the fourteenth century.

Figure 21 gives the plan and elevation of a house in Laval, of a more recent period, in which the wooden structure has more importance and rises in successive corbellings above the ground-floor. This house, whose front is on a steep slope, is intended for two families. The slope of the street has enabled the builder to give an entresol, *A*, to the occupants of the left side, floor-levels being at *B*, and *C*; those in the right have only a high ground-floor and a first-story, the floor-beams being at the level, *C*.

As is indicated by the plan, *P*, each house has its own stairway leading from the shop to the first-story. A wooden beam is carried up the middle of the front and divides the two dwellings from top to bottom. The panelled front of the first story projects over the plain, half-timbered ground-floor, and rests on three corbelling-beams.

The front wall of the first-story is protected by the projection of the rafters carried on the ends of the plates, *S*.

The corner-posts on the front are there only to protect the wooden panelling, for behind these posts are party-walls of rough stone carrying the chimneys. The masonry of the front ceases at the ground-floor in the left dwelling, but is higher for the one on the right. The panels in this example are filled-in with rough masonry between the posts. The two examples bear witness to the free and frank application by mediæval architects of the simple and sensible methods of their art, and to their good judgment in profiting by conditions of site and quality of materials, carrying out the programme given them without keeping to conventional forms, but scrupulously

[1] Translated from the French of Viollet-le-Duc, by Mr. A. B. Bibb. Continued from page 150, No. 666.

observing the principles of solid and durable construction; and that they had mastered those principles there can be no doubt, for the houses they built by such simple and inexpensive means have already lasted five centuries. The fashion of corbelling wooden fronts was followed mainly in the cities, and that system of construction was not in vogue in all the provinces comprising the France of to-day. It was rarely met with north of the Loire, and reached in the middle and the east a very imperfect development. In Bresse, for example, the wooden houses of the fourteenth and fifteenth centuries had wooden fronts in which the system of building with squared

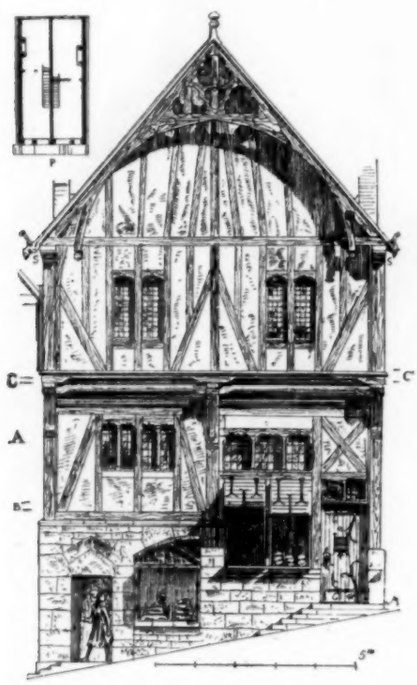

Fig. 21.

logs, followed to-day in Switzerland, appears in conjunction with the more advanced processes of carpentry.

This system of piling up squared timbers, belonging to certain populations whose ethnical character is recognizable, is also dependent upon the abundance of resinous trees, straight like the pine of the Vosges, of the Jura and the Alps. Oaks, requiring much troublesome squaring are seldom used in that sort of timber-work, but the naturally straight and easily squared trunks of pines accommodate themselves readily to log building. In the eastern and middle provinces, at this time, large areas were covered with splendid forests. In Haute-Loire, in Loire and Ardèche, a part of ancient Lyonnais, the mountains, bare to-day, were four centuries ago covered with forests of an hundred years growth protected by the feudal laws.

In the little town of Annonay there are, or at least there were several years ago (for the old buildings disappear like the leaves in autumn), a few houses of the fourteenth and fifteenth centuries, which had survived the fires of the sixteenth century, almost entirely built of wood in a mode of construction which deserves to be studied. Figure 22 represents one of them which may be classed among the houses of the fourteenth century. Above a ground-floor, built of large blocks of stones, is laid a deep furring of pine, the third row of which, forming the floor, projects from the front in corbelling and carries the panelled front of the first story, which has three beams carried across the face with their ends framed into the corner-posts, between which are other vertical timbers framed into the beams. On the sides the ordinary wooden panels, filled-in with rough stone and mortar, formed the partition-walls. Above the first story a second projecting floor receives a second story, also with panelled front, surmounted by a deeply-projecting roof, the combination of which our illustration sufficiently explains. The projection of the roof over the wall of the ground-floor is about 3.50 m., and the front was thus perfectly protected from rain and snow, the arrangement being well suited to the climate of that country, which is hot in summer and very cold in winter.

These wooden houses differed somewhat from those built north of the Loire, where other traditions and different wants were felt. The people of Lyonnais wanted less lights and more perfect shelter. At Annonay they not only protected the house-fronts from sudden storms of snow, but also the streets, so as to allow the circulation of the inhabitants in winter. In the Middle Ages, no matter what may be said by the detractors of that period, the citizen did not shut himself up in the brutal egoism so common to-day. In building his house he remembered that he was a citizen, and he built for himself and for his city. In our time inspectors of the highways protect the common interests. In those times the rules of inspection were less complete and less provident, but each citizen thought a little more of the general interest and tried to assure the well-being of all. This alliance of general and private interests between all the inhabitants of a town is more effectual than the most complete and best-executed ordinances. From an artistic point of view the result is very interesting in other respects, and as is the case with private benefactions as compared with public charity, if the latter is more regular and perhaps more efficacious, the former are more delicate and intelligent.

The construction of houses by "empilage" becomes more characteristic as we approach the Alps. At Nantua (Ain), there are still to be seen several houses of nearly the same period as that of Annonay just given, whose structure approaches more nearly to that of the Swiss "chalet." We trace in them the most ancient traditions (see Fig. 23). The manner in which the wooden panelling of the first-story is laid on the masonry, the double beams under the roof, belong only to certain people who employed solely the method of timberwork by empilage, whilst the outline of the rafters, forming a penthouse, and certain parts of the wood panellings resemble the joined timber-work so common in the north of France. A complete and critical study of these old remains of dwellings on the soil of the Gauls would materially aid in a classification of the races spread over this territory. The religious edifices and the châteaux were often built under influences foreign to the soil where they are found to-day, whereas the dwellings preserved the primitive native traditions. In England, for example, all constructions of wood of the fourteenth and fifteenth centuries have a certain analogy with the art of naval carpentry: the mixture of woods, their relative strength, the frequent use of curved timbers, suggest the combinations of timberwork used in ship-building, while at the same time we find in the north of France a system of timber-work which uses wood only for framing. In the east a more ancient system, belonging to the original population of the region between the Haute-Loire, the Saone, the Alps and the Jura, and in the west and south a very limited sys-

Fig. 22.

tem, in which wood was used only for floors, joists and rafters and masonry for the front, side and partition walls are also found.

We are much inclined to believe that houses of certain countries in the Middle Ages differed but little from those built by their inhabitants before the Roman domination. The Romans had exercised an influence over the building of dwellings only in some few of the provinces, in Provence, a small part of Lyonnais, Languedoc, Saintonge, Angoumois, Perigord and part of Bourgogne. Everywhere else traditions going back to great antiquity were preserved, and toward the fourteenth century, save in Provence and Languedoc, there was a definite anti-Roman reaction, so far as the building of

dwellings was concerned. It seemed that at this epoch the old Gallic nation was restored and with it the architecture whose principles had lain dormant for a time. Secular feudality, so far from impairing this movement, seems, on the contrary, to have aided it, not certainly from a particular taste for any form of art, but because of an incurable aversion to monastic institutions, which, as we have said, preserved the Gallo-Romanic traditions purely enough.

The Mediæval period is one composed of very diverse and often opposite elements; and it is difficult without entering into a long ex-

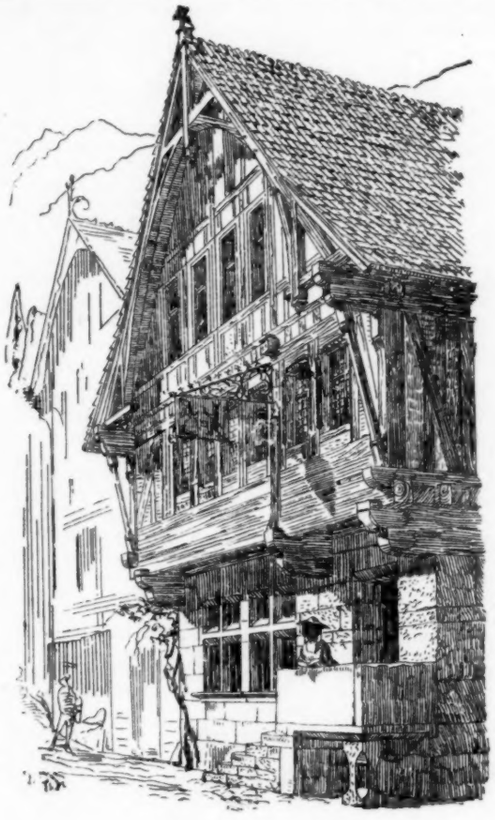

Fig. 23.

position to describe the singular effects produced all at once in the breasts of a people who were unceasingly active.

In the dwellings of town and country, as well as in political history, do we find traces of that national movement which commenced during the reign of Saint Louis, and continued with marvellous activity through the fourteenth and fifteenth centuries, and during times of invasions, wars and miseries without number. In towns where the arts were practised, the methods of construction departed from the traditions preserved in the convents; returning to wood-constructions they plunged into bold combinations which permitted timber-work; they enlarged the openings in the fronts of their houses, so making the streets almost a part of them, and the lives of all the citizens almost a common one. There resulted necessarily from this intimate neighborhood a perfect union of the citizens. Without descending to the public street they could talk from house to house. In certain streets of the fourteenth century the people formed a conventicle by simply opening their windows. The struggle of the people against the secular and clerical powers brought into use many architectural forms which seem very odd to us to-day. The houses of the times, however open their fronts, formed between them impenetrable alleys, whose walls almost touched at the top, leaving at their base easily barricaded passageways. The strength of the citizen lay in concentration, in union of means and cooperation. Safety was found in grouping their houses as much as possible, so as to put their inmates into immediate communication. Timber-work lent itself more easily than masonry to this contracted disposition and system of lighting, beside taking up less of the precious ground-space. It is not surprising that in cities which near the fourteenth century had acquired a certain independence and privileges, and had become in-

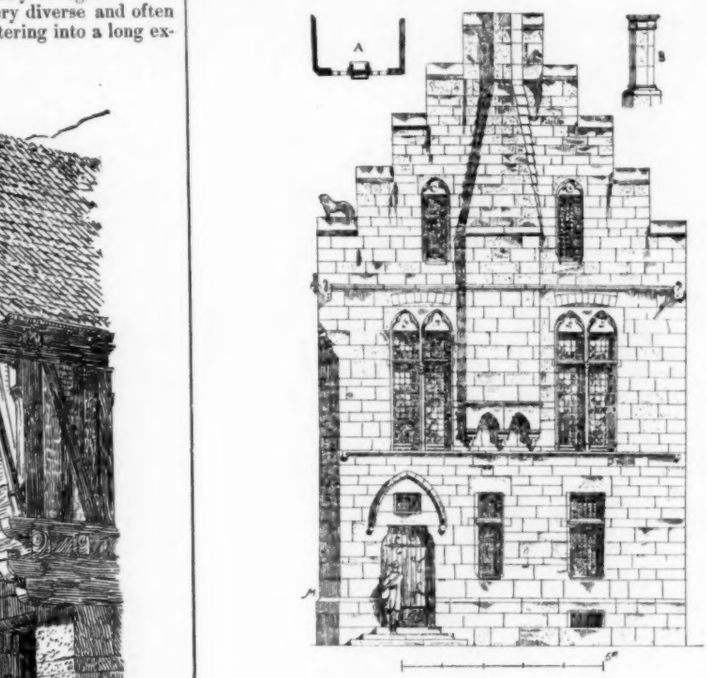

Fig. 25.

dustrious and rich, wood-construction had been almost exclusively adopted. In the southern towns, where the traditions of the Roman municipality were never entirely lost, and where there had not been that fierce struggle against the feudal power and the might of the Church which had borne even more heavily upon the cities than the power of the laity, domestic architecture adhered to stone-construction, and, relatively, wider streets, and did not adopt the very open fronts. The clerical feudal power was felt more heavily in the towns of the north than elsewhere. Toward the end of the twelfth century the bishops in an effort to lessen the exaggerated importance of the monastic institutions, which had absorbed to their profit a great part of the diocesan authority, and desirous also of encroaching on the laic feudal power, connived with most of the large towns to the north of the Loire to build cathedrals which should become the monuments of those cities, in which the citizens could assemble at their will to attend to public affairs, have their law-suits adjudged, and to plot, as the bishops fondly hoped, the destruction of the colossal power of the abbeys and the barons.

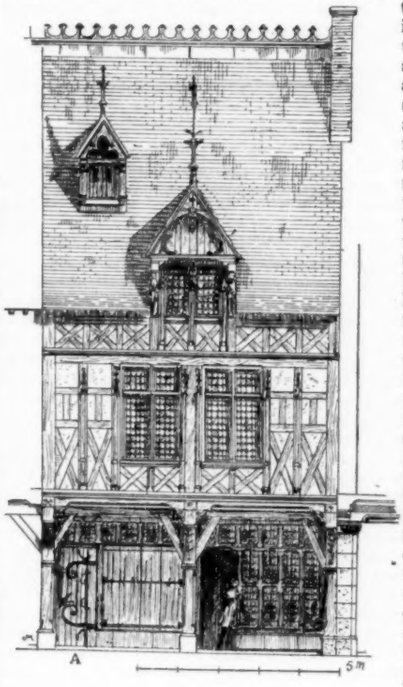

Fig. 26*a*.

This attempt, although seconded with extreme ardor by the cities, failed partly because of the protestations of the four barons sent in 1246 to the King, Louis IX, and partly as a result of the establishment of the royal bailiffs; and the common people, forming a closer

alliance with royalty whose protecting power they felt at that time, soon ceased to submit to the erection of these immense basilicas which had been looked upon as fortresses of their future liberty, and began to oppose the feudal power of bishops and chapters, whose greatest strength was always in the cities.

This struggle, helped on by the lay lords and tolerated by the royal power, the king finding it a means of extending his authority, kept the people of these towns in a constant ferment, while at the same time it gave them an idea of their power if united. From this time until the end of the fifteenth century, the dwellings we have been

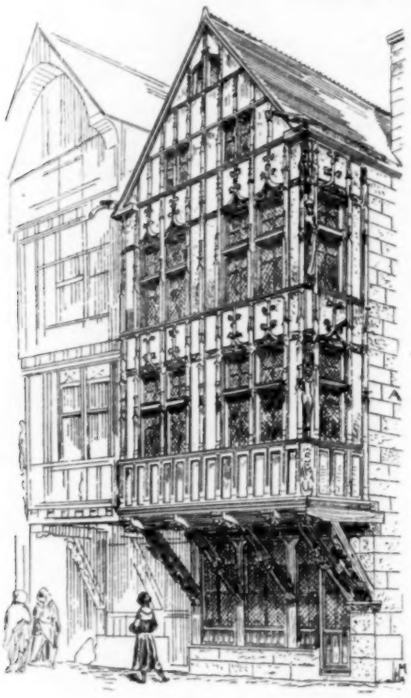

Fig. 26*b*.

describing as being closely joined, very neighborly and almost exactly alike in plan, characterized the architecture of the towns.

A study of the customs of the Middle Ages helps us to find the reasons of their architecture. The Romans passed a great part of their time in public monuments or basilicas, under the porticos, in the hot baths and the games, in theatres, circuses, amphitheatres and the like, and though we have in our own day a multiplicity of public buildings, the modern student looking over a plan of ancient Rome, wonders where the inhabitants of that populous city could have lived. The Romans, excepting the owners of immense palaces, did little more than eat and sleep in their own houses. In the Middle Ages, on the contrary, each family lived in its own domicile, the citizens had no time for assemblies, and even had the towns been rich enough to build public edifices, the principles of feudal Government would have opposed them. The church was the only building in the town where public meetings were permitted, which explains the eagerness with which the populous towns came to the aid of the bishops when they projected the great cathedrals. But when this scheme was suddenly thwarted and the people found in the royal protection a real security, they set themselves to building dwellings with an ardor altogether new. Wood lent itself marvellously to the ready satisfaction of their wants, combining the advantages of rapidity of execution with cheapness, and, what was still more important, economy of ground.

Everywhere, then, until the end of the sixteenth century architecture followed its regular course; it improved the dwellings, made them lighter and more commodious, but continued to employ the Roman methods. The shape alone was modified. There are in Bourgogne, Lyonnais, Limousin, Perigord, Auvergne and Languedoc houses of the fourteenth and fifteenth centuries which differ from those of the twelfth and thirteenth only in the style of their architecture. Neither the construction nor the disposition of these dwellings is modified in a sensible degree. In the still more southern provinces, which, in the fourteenth century were not French, there were built at this period many dwellings whose style very closely preserves the Roman character. There is, for example, one among several houses in Perpignan, used in late years as a court-house, which shows a front of a style almost antique, in despite of details borrowed from the "Aragonais" school of that period (Fig. 24). In the east the traditions of Roman house-construction were followed much later, that is to say, until the fifteenth century. Certain houses in Trèves, Cologne and Mayence, built in the beginning of the thirteenth century, were they in the Ile de France and Champagne, could pass for Roman houses. There are still found in several of these dwellings particular arrangements which in France pertain only to the twelfth century, or to the beginning of the thirteenth, such as, for example, chimneys carried on corbelling upon the front walls from the first floor. Figure 25, gives the front of one of these old houses in Trèves dating from the beginning of the fourteenth century, which has a chimney on the middle of the gabled wall on the street. The fireplace is built where shown in the plan *A* and the flues topped by the crown *B* are carried on three brackets, shaped like capitals and on two arches, between the windows of the first story. It must have been very agreeable, whilst warming oneself to be able to enjoy the outside view. Windows so placed enabled one to work before the chimney-place and to keep warm without being annoyed by the reflection of the flame. The people of that epoch had learned to secure their comfort; we, of to-day, do not seem to have gained so much, a fact which not unnaturally makes us somewhat dubious of our superior skill and wisdom. However primitive this comfort may have been, contemporaneous architecture, at least, entirely subserved it, while our own architecture (at least that which we wish to persuade ourselves is ours) is in perpetual discord with our indoor habits. Let us return to the houses of the French cities of the fourteenth and fifteenth centuries, in which period wooden houses were in the majority. They generally showed their gables to the street, building-lots being rather deep than wide, for the reason which always rules in cities that the street-front is the most valuable ground. However, if the site were on a corner gables were raised on the side walls, and the wood-panelled street front was guttered.

Figure 26, is a house of Beauvais which shows this arrangement. On the ground-floor is a porch with stores at the back, such as can be seen at Rheims. The first story is composed of two rooms, to which access is gained by a spiral staircase built at the back of the passageway *A*. Under the roof is a large room lighted by two dormer windows, one on the street, the other on a little court. This dwelling dated from the beginning of the fifteenth century. There still exist at Orleans several houses of this kind, though without the porch. After the war of independence in the fifteenth century, when the English were forced to abandon the north and west of France, there were, during the reign of Louis XI, unmistakable evidences of prosperity among the city people. A great number of private dwellings were erected at Paris, Rheims, Beauvais, Rouen, Orleans, in all the cities of Normandy, in Picardy and in the Ile de France. Ground in the cities acquired considerable value. Full circulation on the street was secured by suppressing even the porticos whose pillars or posts were an embarrassment, and they built the fronts corbelling over the streets from the beams of the first-story. These fronts became thus true "bretéches," wide and having at the floors two metres of projection. This system of construction obtained in those streets which opened on the market places, which were almost always surrounded with porticos. There is still to be seen at Rheims a house whose front in wooden panels, perfectly preserved from top to bottom, is carried on corbellings of five strong supports and is projected 1.65m. over the public street (26*b*).

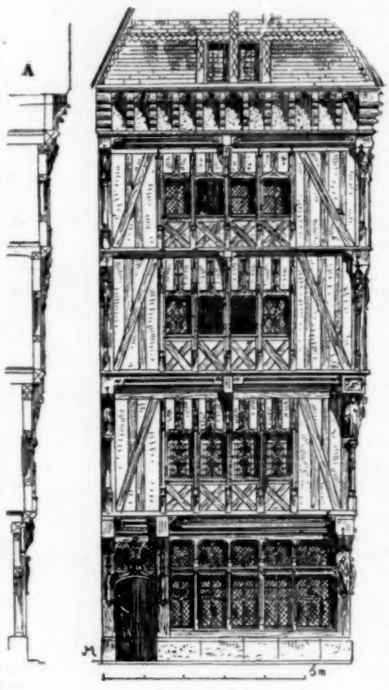

Fig. 27.

On one side a partition-wall *A* of stone, carried the chimneys and supports two brackets, on the other side is a simple wood partition. The wooden statues which were carved on the corner-posts on the wall side no longer exist, but the two end brackets show carvings in half-round relief, on one side Samson killing the lion and on the other St. Michael overthrowing the demon. This projecting panelled front with side lights is finished and carved with great perfection, and it must have been splendidly framed to have so long maintained its shape, although in its whole height there is not a single cross of St. Andrew. The spaces between the posts are filled with masonry and stucco. At Figure 27, is given a timber-work house at Rouen, four stories high, a little older than the preceding example, belonging in fact to the first half of the fifteenth century. It stands at the angle of two streets. The wooden fronts of each story are corbelled one beyond the other (see the cut, *A*) so that the third story covers a sur-

face sensibly larger than the ground floor. The cornice at the base of the gable represents a sort of machicoulis. In the fifteenth century the windows were numerous and small, a necessity of construction when the woodwork was carried to a great height, such constructions by reason of the material employed being subject to movements. The window-frames were often put out of place, strained or warped by the shifting of the timbers. It was frequently necessary to take them out and replace them. The smaller sashes were much less sensible to changes of temperature or followed more easily the movements of the timber-work. The panels strengthened by cross-braces prevented the warping of the window-jambs and the weights of the front were principally carried on the corner-posts.

[To be continued.]

EQUESTRIAN MONUMENTS. — X.[1]

PASQUINADES.

An Old Pitcher.[2]

"AND what is Pasquino doing?" said Marforio, one morning. "I am taking care of Rome that it does not go away to Urbino," was the satirical rejoinder that Pasquino made twenty-four hours later. This particular interchange of wit was intended to express resentment at the partiality that Clement XI showed to his native town, Urbino, at the expense of the citizens of Rome, and was but one of a series of epigrams that the early riser might read posted on the pedestal of one or the other of these famous statues which indignant or discontented citizens had selected as the mouth-piece to give expression to their dissatisfaction at the existing state of things, a dissatisfaction mainly directed at the venalism of the reigning pontiff. The statue known as Pasquino[3] was a mutilated figure set up at the end of the Palazzo Braschi, near the Piazza Navona, a neighborhood where, in the latter part of the fifteenth century, was the shop of a shrewd-tongued, gossipy tailor which was frequented by the upper classes, who gathered there to interchange the news of the day and laugh at the brilliant sallies of the witty tailor. It was after his death that the statue, which had long lain half embedded in the ground, was set up, and at once the fiction was established that it was Pasquino who had come back to life again for the purpose of continuing at the old stand the agreeable task of launching in writing those bitter epigrams which the hand of death had prevented his voicing orally. However keen a watch was kept, some one was found skilful enough to affix the skit without detection; and as in life the tailor's wit was drawn out by some clever interlocutor, the colossal reclining statue of the river-god Marforio was selected as his gossip. Free speech was not for those days and the populace delighted in this early attempt to perform the work that is now carried on by the unbridled morning newspaper.[4] The scandal, for the epigrams and verses were often scurrilous in the extreme,[5] at length reached such a pitch that at the close of the sixteenth century the statue of Marforio was removed to its present position in the Capitol. As for Pasquino, Adrian VI threatened to have him thrown into the Tiber, but a friend, Ludovico Suessano, dissuaded him from it by declaring that if he did the very frogs would croak pasquinades against him. Pasquino knew his power and did not hesitate to flaunt it in the face of the victim of his corrections, and once his pedestal bore this question, addressed to Paul III [1534–49]. "Great sums were formerly given to poets for singing: how much will you give me, O Paul, to be silent?"

This particular form of pasquinade has been used also in later times; thus when the equestrian statue of Louis XV, by Bouchardon, was set up in what is now the Place de la Concorde, Paris, the pedestal being adorned with statues of Strength, Wisdom, Justice and Peace, by Pigalle, there appeared one morning on the pedestal the following couplet:

"Grotesque monument, infâme piédestal!
"Les Vertus sont à pied, le Vice est à cheval!"

And a short time after the following appeared:

"Il est ici comme à Versailles.
"Il est sans cœur et sans entrailles."

While a third epigram, of the briefest, was simply:

"Statua statuæ."

A somewhat closer analogy can be found in the case of the equestrian statues, of Charles I, at Charing Cross, and of Charles II, in the Stocks Market, London, though in this case, the pasquinade was published and not merely affixed to the pedestals of the statues. In 1674, Andrew Marvell, who seems to have had little love for the Stuart family, wrote a clever skit which purports to be a dialogue held between the horses which upbore these despised monarchs, and each quadruped sought to mitigate the shame he felt at his own ignoble service, by casting reflections on the rider of his fellow.

The dialogue is thus introduced:

> If the Roman Church, good Christians oblige ye
> To believe man and beast have spoke in effigie,
> Why should we not credit the public discourses
> In dialogue between two inanimate horses.
>
> The horses, I mean, of Woolchurch and Charing
> Who told many truths worth any man's hearing,
> Since Viner and Osborn did buy and provide 'em
> For the two mighty monarchs who now do bestride 'em.
>
> The stately brass stallion and the white marble steed
> The night came together, by all 'tis agreed.
> When both kings were weary of sitting all day
> They stole off, incognito, each his own way,
> And then the two jades after mutual salutes,
> Not only discoursed but fell into disputes.

It is in the course of these disputes that they indulge in mutual recriminations, one attacking the profligacy of the second Charles, the other reflecting on the despotic acts of the first. The bronze horse, apropos of the report that Charles II had embraced the Catholic religion, said that it was wondrous

> "That he should be styled 'Defender of Faith'
> Who believes not a word that any man saith"

And adds:

> "Though changed his religion, I hope he's so civil?'
> Not to think his own father has gone to the devil."

The conclusion reached in their midnight discussion is thus expressed:

> "'But canst thou devise when things will be mended?'
> 'When the reign of the line of the Stuarts is ended.'"

The statue of Charles I at Charing Cross still endures, but the other party to this midnight colloquy has, with his rider, disappeared entirely, or, at least, sought such seclusion that, if it still exists as a whole, its resting-place is unknown; while if it has undergone a third step in its career of transubstantiation, it is not possible to identify either horse or rider as parts of any now existing statue.

The devotion that the Stuart kings were able to arouse in the hearts of their followers was the cause of many of the most romantic incidents of their times, which story-writers in prose and verse have not been slow to take advantage of, and the vivid-colored lives of the leading cavaliers are in this way as familiar to us as their parti-colored clothes are through the portraits that still hang in private and public galleries. At the Restoration this devotion had free vent, and he was surest to win the monarch's favor whose wit could evoke the most taking form of flattery.

Robert Viner, a worthy goldsmith, and by consequence one to whose purse the ever-necessitous Charles may have more than once had recourse — and money-lenders were generally pretty sure of their cent per cent in dealing with him — was in 1668 Lord Mayor of London, perhaps as a reward for his complacency in holding his purse-strings with a slack hand when the King was his visitor, and seeking, perhaps, how he might glorify himself and secure further advancement, determined to erect a statue to the honor of the recently restored monarch. But having been bred up in mercantile ways, he knew the value of his money better, perhaps, than he understood art, and having in the course of recent travels in Italy come upon, at Leghorn, an unfinished and neglected statue, he procured it at a bargain. As to his practical mind there was no unseemliness in giving the order to convert the figure of stern and upright John Sobieski, King of Poland, into the wine and woman loving Charles Stuart, the Pole's head was removed, and the Anglicised Scot's substituted in its place by Latham, and the Turk upon whom the horse was trampling was rechristened Cromwell, though so little heed was taken to conceal the Hebraic character of the proceeding that this figure was allowed to retain its original turban. It is barely possible there may have been in this a further merry jest in representing the ascetic Roundhead leader in the guise of a harem-keeping infidel.

This marble statue, which Viner at first wished to set up before the Royal Exchange, but which he was not allowed to place there because of the "bignesse" of the group, was finally set up in the Stocks Market on May 29, 1672, on a freestone pedestal, eighteen feet high, ornamented with niches and dolphins, and enclosed by an iron fence; and the water-conduit near which it was placed on that day poured forth claret. Here it stood till 1738, when it was removed in order to make way for the Mansion House, and was for many years stored in an inn-yard, where the rider was probably as little out of place as his steed.

The following rhymes on the occasion of taking down the statue allege that the figure on the horse had represented Cromwell also; but this is an anachronism, the Protector being dead before Sobieski won his great battle:[6]

[1] Continued from No. 670, page 197.

[2] After Fairholt's "*Rambles of an Archæologist.*"

[3] This statue is said to have represented Menelaus trampling on Patroclus. Bernini declared that it was the finest piece of ancient sculpture in Rome.

[4] The public opinion of Rome, has only one traditional organ. It is that mutilated block of marble, called Pasquino's statue, . . . on which are mysteriously affixed by unknown hands the frequent squibs of Roman mother-wit on the events of the day. That organ has now uttered its cutting joke on the Fathers of the Council. Some mornings ago there was found pasted in big letters on this defaced and truncated stump of a once choice statue the inscription "*Libero come il Concilio.*" The sarcasm is admirably to the point. — *London Times*, Jan. 16, 1870.

[5] When in the time of Pius VI, the loaf of bread was greatly reduced in size, one of these little morsels was hung here, with the inscription "*Munificentia Pii Sexti*," a take-off on this Pope's practice of labelling with this statement all buildings erected by him.

[6] The connection is not clear, as the statue was erected in 1672, years after the Restoration, and before the siege of Vienna, which took place in 1683. Of course the statue never represented Cromwell.

THE LAST DYING SPEECH AND CONFESSION OF THE HORSE AT STOCKS MARKET.

Ye whimsical people of London's fair town,
Who one day put up what the next you pull down;
Full sixty-one years have I stood in this place,
And never till now met with any disgrace.
What affront to crowned heads could you offer more bare,
Than to pull down a king to make room for a mayor.
The great Sobieski, on horse with long tail,
I first represented when set up for sale;
A Turk, as you see, was placed under my feet,
To prove o'er the Sultan my triumph complete.
Next, when against monarchy all were combined,
I for your Protector, Old Noll, was designed.
When the King was restored, you then, in a trice,
Called me Charles the Second, and by way of device,
Said the old whiskered Turk had Oliver's face,
Though, you know, to be conquered he ne'er felt the disgrace.
Three such persons as these on one horse to ride —
A hero, usurper, and king all astride:
Such honors were mine; though now forced to retire,
Perhaps my next change may be something still higher.
From a fruit-woman's market, I may leap to a spire
As the market is moved, I'm obliged to retreat,
I could stay there no longer where I'd nothing to eat:
Now the herbs and the greens are all carried away,
I must trot unto those who will find me in hay.[1]

If lost to public sight, it had been kept in mind by the descendants of the worthy ex-Lord Mayor, and in 1779, on the petition of Robert Viner, Esq., the Common Council presented the group to him, and it was at once moved from London to his family country-seat. What became of it on the extinction of the Viner family is not known. Very likely it became a "lot" at the final auction sale of family-plate, furniture, pictures, and bric-à-brac, and it is not unlikely that, if the records were imperfect, the glib-tongued auctioneer may have hesitated long to which one of the lately deceased's forbears he should ascribe the uncommon feat of trampling upon turbaned Turks, while himself arrayed in the undress of Classic attire.

The prints of the period do not give a very clear notion of what the artistic merits of the statue really were, and there was so obvious an invitation to jest in the turban-covered Cromwell that the real merits of the sculpture may have been overlooked, particularly when there were added the flouting gibes of the free-tongued wits, who did not hesitate to follow the example of Lord Rochester, who, in 1676, in his lampoon, "*The History of the Insipids*," declares that:

"Could Robin Viner have foreseen
The glorious triumphs of his master,
The Woolchurch statue gold had been
Which now is made of alabaster:
But wise men think, had it been wood
T'were for a bankrupt king too good.

"Those that the fabric well consider
Do of it diversely discourse.
Some pass their censure on the rider,
Others their judgment on the horse:
Most say the steed's a goodly thing,
But all agree 'tis a lewd king."

The Stocks Market. — "The Mansion-House and many adjacent buildings stand on the site of Stocks Market; which took its name from a pair of stocks, for the punishment of offenders erected in an open place near this spot, as early as the year 1281. This was the great market of the city during many centuries. In it stood the famous equestrian statue erected in honor of Charles II. . . . The statue was removed in 1738, to make room for the Mansion-House." From Pennants "*London*," p. 368.

"The Stocks Market was removed in 1737 to Farringdon Street, and was then called Fleet Market." — From Thornbury & Walford's "*Old and New London*."

Charles II. — ("The Merry Monarch" — "The Mutton-eating King.") King of England; son of Charles I; born May 29, 1630; landed in Scotland, 1649, and was crowned at Scone; defeated at Dunbar and Worcester; fled to France, but was restored to the English throne by General Monk, 1660; married Catharine of Braganza; joined the triple alliance against Louis XIV, with whom he soon made a secret-treaty; died 1685.

John Sobieski. — ("The Wizard.") King of Poland. Born 1624. Died 1696. Raised the siege of Vienna by the Turks in 1683. He sent the Mussulman standards captured before that city to the Pope, with the message, "I came. I saw. God conquered."

The Woolchurch Statue. — Sir Robert Viner was a famous goldsmith. The statue was referred to by Rochester and Marvell as the Woolchurch one, because of its proximity to the site of the church of St. Mary's Woolchurch which formerly stood in the Stocks Market. It was burnt in 1666.

[To be continued.]

COMMUNICATIONS.

FRENCH LAWSUITS.

Montreal, Can., October 20, 1888.

To the Editors of the American Architect: —

Dear Sirs, — In your issue of the 28th of April last, there is an article on "A case in France of Architects' Mutual Defence Society" in which there is mentioned a suit between the officials of a certain hospital and their architect; the verdict resulting in favor of the architect. Will you kindly in your next issue give the names of the parties to the suit and also where the French law referred to by the judge can be found, and oblige,

Yours respectfully, A Subscriber.

[The *Bulletin* of the Architects' Mutual Defence Society gives only the initials of the names of parties to the disputes in which the Society intervenes. This particular suit is given as being between M. P ——, architect, and the Hospital, or Asylum, (Hospice) of Ch. —— Ch. The decision was given by the Conseil d'Etat, July 15, 1887. The text of the decision contains no references to other cases. — Eds. American Architect.]

AUTOMATIC VENTILATORS.

Cincinnati, O., October 18, 1888.

To the Editors of the American Architect: —

Dear Sirs, — Can you give me the name and address of the manufacturers of automatic opening and closing louvre ventilators (made of sheet-iron, I think)? You would greatly oblige,

Yours very truly, A. O. Elzner.

[The ventilators with slats hung so as to close against an inward current, but open to allow an outward current to escape, were made in Boston years ago by a company which has now gone out of existence, and we do not know that they can be had anywhere. Perhaps an ingenious galvanized-iron worker could make them to order. — Eds. American Architect.]

NOTES AND CLIPPINGS.

Old Roman Plank Roads. — The Prussian Minister of Education, von Gossler, having learned that Prof. F. Knoke had lately found traces of old Roman plank roads on the moor between Mehrholz and Briigel, not far from Diepholz, in Lower Hanover, invited that gentleman to fully investigate the matter. He has just completed the task. He was able to trace the lines of two parallel plank roads right across the moor, presenting all those distinctive features which are found in Roman works of this kind. One of them shows evident signs of having been demolished by force, the boards, which were originally fastened with pegs to the bearers, having been violently torn away and buried in the bog to the right and left of the track. The other road seems to have fallen into decay, but there are signs of repairs executed even during the Roman period. For in places boards have been found fastened over the original planks, the fashion of both being the same. Those repairs seem to have been carried out hastily, for in one place a mallet, employed probably to drive home the pegs, was found on the track, forgotten, no doubt, by the workmen. The local archæologists feel assured that they have here the *pontes longi* which were used A. D. 15, by the Roman commander, A. Cæcina, in his retreat from Germany to the Ems. — *London Times.*

Do Railroad Locomotives cause Floods and Storms? — A correspondent of the *Northwestern Railroader* advances a curious theory for the increasing prevalence of floods and rainstorms. He says that there are over 30,000 locomotives in use in North America, and estimates that from them alone over 53,000,000,000 cubic yards of vapor are sent into the atmosphere every week, to be returned in the form of rain, or over 7,000,000,000 cubic yards a day — "quite enough," he says, "to produce a good rainfall every twenty-four hours." Estimating the number of other non-condensing engines in use as eight times the number of locomotives, the total vapor thus projected into the air every week in this country amounts to more than 470,000,000,000 cubic yards. "Is this not," he asks, "sufficient for the floods of terror? Is there any reason to wonder why our storms are so damaging?" — *Age of Steel.*

A New Steam Boiler. — "A boiler for the instantaneous generation of steam is the very newest thing in our line," said a leading manufacturer to a *Mail and Express* scientist the other day. "The apparatus consists of a thick wrought-iron tube of any convenient diameter, which is flattened at a temperature below the welding point, till its internal walls are almost in contact, a section of the tube showing only a straight line the thickness of a hair. The tube is then coiled into any convenient shape and is exposed to the direct heat of the furnace. Cold water being forced in at one end by a pump issues out from the other as steam, the pressure and dryness of which depend on the temperature of the tube." It is claimed that no furring or scaling up of the tube takes place, as the high velocity with which the steam passes through breaks up and carries along with it any deposit at the very instant of its formation. The largest boiler yet constructed on this plan has been a ten-horse-power one, and has proved so satisfactory that the system is about to be extended. The government has experts at work examining the system, expecting to adopt it for use in the construction of torpedo boats.

Death of M. Felix Rouquet, Architect. — The French papers, announce the death of the able architect, M. Félix Rouquet, who was born at Châlon-sur-Saône in 1822. He took part with Ballu in the restoration of the church at St. Germain-l'Auxerrois, the Tour de St. Jacques de la Rouchine, the churches of St. Sèverin, Ste. Clotilde, and La Trinité, Château de Chenonceaux, the Hôtel Carnavalet, and other buildings. He was the author of an excellent monograph on the Cathedral at Rheims, and one of the best architectural draughtsmen France has produced. He received a Medal of the Second Class at the *Salon* of 1874; another at the Exposition Universelle of 1878. — *Birmingham Post.*

[1] From Chambers's "*Book of Days.*"

S. J. Parkhill & Co., Printers, Boston.